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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,809	01/29/2001	Glenn G. Amatucci	15884-54	7825

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DOCKET ADMINISTRATOR  
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EXAMINER

MERCADO, JULIAN A

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 02/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/771,809	<b>Applicant(s)</b> AMATUCCI, GLENN G.	
	<b>Examiner</b> Julian Mercado	<b>Art Unit</b> 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 8-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Remarks***

This Office action is responsive to applicant's amendment filed November 17, 2005.

This Office action presents a new ground of rejection and is therefore made NON-FINAL.

### ***Claim Rejections - 35 USC § 102***

The rejection of claims 8- 11 under 35 U.S.C. 102(e) based on Yamawaki et al. (U.S. Pat. 6,475,673 B1) has been withdrawn in favor of the new ground of rejection (based on the same) set forth below.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 8- 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki et al. (U.S. Pat. 6,475,673 B1).

At the outset, the examiner notes that in order to more properly apply the teachings of Yamakawi et al. towards the present claims, the prior rejection made under 35 U.S.C. 102(e) is now applied under 35 U.S.C. 103(a). Arguments directed to Yamakawi et al. failing to anticipate the present claims are therefore deemed moot as this statutory ground of rejection has been withdrawn.

Art Unit: 1745

As discussed in the prior Office action, Yamawaki et al. teaches a lithium ion battery having a lithium titanate compound,  $\text{Li}_4\text{Ti}_5\text{O}_{12}$ . The particle size thereof “is in the range of 0.1 to 15  $\mu\text{m}$ , preferably in the range of 0.3 to 10  $\mu\text{m}$ , and is more preferably in the range of 0.5 to 5  $\mu\text{m}$ .” See col. 4 lines 14-21.

Applicant’s arguments have been fully considered. It appears to the examiner that in asserting that “the average Yamakawi [et al.] particle size lies between 100 nm and 15  $\mu\text{m}$ , preferably between 300 nm and 10  $\mu\text{m}$ , and more preferably between 0.5  $\mu\text{m}$  and 5  $\mu\text{m}$ ,” applicant appears to differentiate the claimed “less than 100 nanometers” for lithium titanate from the range disclosed by Yamakawi et al. in that the patentees teach a particle size inclusive of the disclosed range. (remarks on page 7, emphasis in original) The examiner disagrees with the interpretation of Yamawaki et al.’s particle size lying between the lowermost and uppermost particle size. Indeed, the disclosed particle sizes by Yamakawi et al. are *inclusive* of their endpoints. (emphasis added) It is clear from the patentees’ disclosure that the particle sizes include 100 nm (the lowermost particle size), much as it includes 15  $\mu\text{m}$  (the uppermost particle size). Moreover, the examiner asserts that the patentees clearly disclose particle sizes “in the range of 0.1 to 15  $\mu\text{m}$ ...” The examiner interprets this teaching as particle sizes in the range of 100 nm, inclusive of 100 nm, up to and including 15  $\mu\text{m}$  and points in the range of 15  $\mu\text{m}$ . Thus, the lowermost particle size in the range of 100 nm is interpreted as, e.g. 99 nm, 100 nm and 101 nm. At least to the skilled artisan, Yamakawi et al. teaches the claimed less than 100 nm for lithium titanate insofar as particle sizes in the range of 100 nm, as exemplified herein, overlap therewith.

To the extent that it may be applicable towards the present ground of rejection, applicant's arguments have been fully considered, however they are not found persuasive.

As to applicant stating that Yamakawi et al. prefers particle sizes much larger than 100 nm "perhaps because of the notion that nanomaterials are detrimental to the performance of the battery...", applicant is reminded that attorney arguments are not evidence and cannot take place of evidence in the record; an assertion of what may follow from speculative scenarios is just attorney argument and not the kind of factual evidence that is required to rebut a *prima facie* case of obviousness, such as that which is presently relied upon as a new ground of rejection. See MPEP 2145.

With respect to applicant's assertion for evidence of extraordinary benefits such as high energy storage capacity and high recharge rates, it is unclear from the reply as to where from the disclosure this purported evidence is derived (examiner note: applicant did not provide page and/or line citations to the disclosure in support thereof) Figure 5 is said to teach superior capacity of smaller lithium titanate particles compared with larger particle sizes, but as understood by the examiner Figure 5 merely shows capacity levels as a function of cycle rates. Figure 7 merely shows the capacity level during cycle usage. Furthermore, the examiner asserts that any assertions of unexpected results would need to show a direct comparison of the prior art's teaching of particle sizes in the range of 100 nm as compared to applicant's claimed particle sizes less than 100 nm. To the extent that applicant's disclosure is understood by the examiner, no evidence of comparative results is commensurate with these values.

As discussed in the prior Office action, the rejection of claim 9 in reciting product-by-process limitations of heating, holding and cooling of a mixture, *inter alia*, to obtain the instant

Art Unit: 1745

lithium titanate intercalation compound is maintained insofar as the claimed product appears to be the same or similar to the prior art product insofar as being a lithium intercalation battery active material having a particle sizes in the range of 100 nm. Applicant's arguments have been fully considered, however they are not found persuasive. Indeed, the examiner acquiesces with applicant's assertion that a product-by-process claim is a "permissible technique that applicant may use to define the invention." But only insofar as it defines the *product*, not the process by which it is made. (emphasis added) The examiner maintains that alleged differences would have been obvious to the skilled artisan as a routine modification of the product absent of a showing of unexpected results. *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985). "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) While applicant appears to submit that the product is (somehow) different from that shown in the art due to "consistent nanostructure lithium titanate product", "...high cycle rate capacity" and "magnitude increases in economies of time and energy", the examiner notes that these features or physical properties are presently outside the scope of the claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Julian Mercado